

## Preface



Dear colleagues,

On the following pages, you will find a series of 24 articles emerging from the second edition of the workshop ‘Engineering of Functional Interfaces’, held on June 18–19, 2009, at Hasselt University. After initiating the EnFI’s in 2008 at Aachen University of Applied Sciences with a novel workshop format, aiming especially at younger scientists and an interdisciplinary perspective, EnFI 2009 counted already 80 participants, 6 overview and tutorial lectures, and almost 50 original contributions. Each contribution was presented orally and as a poster, giving plenty of opportunity for in-depth discussions in each of the four topical sessions.

The first day of the workshop started with an overview lecture by J. Opitz (Fraunhofer Institute for Non-Destructive Testing, Dresden) on nanodiamonds – a hot topic in fundamental materials science with wide application perspectives in nano- and biotechnology. The first session, ‘Thin film techniques, surface engineering, and spectroscopy’, was introduced with a tutorial lecture by A. W. Hassel (Max-Planck-Institut für Eisenforschung, Düsseldorf) on smart, combinatorial approaches for the synthesis and screening of functional alloys. The second session on ‘Biomaterials, biosensors, and pharmaco-medical diagnostics’ was launched with a tutorial by Michael Keusgen (Philipps Universität Marburg), illustrating clearly the relevance of ‘solid-state effects’, like magnetism, plasmon excitations, and quantum dots for advances in medicine. The day ended with an evening lecture by J. V. Manca (Hasselt University) on solar energy and organic electronics – right before the ‘Belgian Beer Tasting’ event.

The second day addressed the topic ‘Nanostructures: from fundamentals to emerging applications’. The tutorial was given by H.-G. Boyen (Hasselt University) on the preparation and electronic-band structure analysis of size-selected metal nanoparticles and on the potential of bottom-up materials synthesis routes. This aspect was also complemented by various presentations on nanostructures based on oxides, semiconductors, and organic, bio-inspired compounds. The fourth and final session aimed at ‘Integrated systems, fundamentals, and modelling aspects’, where functional interfaces are utilized as the essential, smart parts in sensor systems. The tutorial by J. Lammertyn (Catholic University Leuven) gave an instructive overview on the state-of-the-art lab-on-chip technologies and the integration of solid-state based sensing devices with biochemical analyses by microfluidics. Finally, the three Best Paper Awards went to Lakshman Neelakantan (Max-Planck-Institut für Eisenforschung, Düsseldorf), Matthias Bäcker (Aachen University of Applied Sciences), and Alexander Riskin (Hasselt University) for their outstanding posters and presentations.

Of course, we would also like to thank the editorial staff of *physica status solidi (a)* cordially for their ongoing support in publishing the conference proceedings in a widely read, international journal with a double peer-review system. Special acknowledgements go to Julia Hübner, Stefan Hildebrandt, and Martin Stutzmann for their helpful support in the entire editorial process and to all referees, who guaranteed the scientific standard of all contributions with their appreciated advice.

To finish, we would like to invite you cordially for the 3rd edition of the EnFI workshops: 'EnFI-2010' will be organized on July 15–16, 2010 by Philipps University Marburg / Germany in the splendid environment of Rauischholzhausen Castle. Again, *physica status solidi* will host the conference proceedings and we are looking forward to an excellent and fruitful conference.

Hasselt, 25 February 2010

Patrick Wagner, Theodor Doll,  
and Michael J. Schöning

## Engineering of Functional Interfaces EnFI-2010:

July 15–16, 2010  
Philipps University Marburg

Conference venue:  
Rauischholzhausen Castle  
Ferdinand-von-Stumm-Straße  
35085 Ebsdorfergrund-Rauischholzhausen  
Germany

Chairman: Michael Keusgen

Webpage: [www.EnFI-2010.eu](http://www.EnFI-2010.eu)



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